

retains the impacted pollen. The disks are rotated 6° for each electrical pulse received by a stepping motor which provides a capability of 60 discrete samples per disk. Because the disks advance only upon command, the sophistication of the sampling sequence depends solely on the availability of properly spaced electrical pulses.

Smoke tracer studies show that the rotating mechanism develops local turbulence which probably smooths the small-scale pollen gradients near the sampler. This smoothing makes the pollen catch insensitive to locally anisotropic wind eddies of approximately sampler dimensions and therefore more representative of the true pollen concentration.—ALAN L. COLE, Ph.D., *associate research meteorologist*, and ALBERT W. STOHRER, M.S., *assistant research engineer, department of meteorology and oceanography, College of Engineering, University of Michigan, Ann Arbor. This invention was developed under Public Health Service research grant No. AP-00006.*

Microscope Substage



A microscope substage has been designed to facilitate the manipulation of single plant cells under sterile conditions. The substage can be used with the Bausch & Lomb Stereozoom Dissecting Scope, model SVB-73. The substage consists of an aluminum frame holding a glass plate. On the glass plate a glass tray, as wide but only two-thirds as long, slides back and forth, guided by the aluminum frame. The glass tray is designed to hold two 25 by 100 mm. standard petri dishes. The middle third of the substage is left open for the microscope; the left and right thirds at each end are covered by plexiglas "garages." A petri dish on the glass tray is in one of the garages or under the microscope. The microscope is surrounded by a plexiglas collar with an opening which permits the insertion of needles, pipettes, and other tools used to

manipulate cells. The collar and garages maintain a sterile atmosphere over the open petri dishes. Because all components, except the frame, are made of transparent material visibility of the objects remains maximum, lighting optimum, and it is possible to illuminate cells from underneath. The stage is easily assembled and disassembled.—TOM STONIER, Ph.D., *associate professor, department of biology, Manhattan College, Riverdale, N.Y.*, and HARRY RYMER, *engineer, Laboratory Concepts, Inc., Bronx, N.Y. This invention was developed under Public Health Service grant No. CA-06957.*

Achilles Reflex Elgon



A special elgon (electrogoniometer) was designed to obtain a record of an Achilles reflex test. It consists of a goniometer in which a potentiometer was substituted for the protractor. The potentiometer has 15,000 ohms of resistance and two metal arms which are 12 cm. and 15 cm. long. This instrument is placed so that the potentiometer is over the center of the ankle joint; the longer arm is taped to the lower leg and the shorter one to the lateral side of the foot pointing to the little toe.

The elgon is connected to a small box containing a 2,200-ohm adapter, a 500-ohm sensitivity, and a 9-volt battery. The box is connected to an electrocardiograph which records the movement of the potentiometer. The record will show an indentation caused by the hammer tap followed by the upstroke of muscular contraction and then by the downstroke of relaxation. The reflex time and the duration of contraction and relaxation phases can be measured easily from the record.—PETER V. KARPOVICH, M.D., *research professor of physiology, Springfield College, Springfield, Mass. This invention was developed under Public Health Service research grant No. AM 06724-03.*

ROYLE, CHARLES M. (Hospital Educational and Research Fund, Inc., Albany, N.Y.), and BREWSTER, AGNES W.: *The impact of aged patients on hospital use and income. Public Health Reports, Vol. 81, June 1966, pp. 488-496.*

Before undertaking a multi-hospital project to measure the adequacy of the voluntary health insurance coverage of discharged patients, the Hospital Education and Research Fund, Inc., undertook a pilot study to determine whether the requisite data could be obtained from hospital records and what the cost per discharged patient would be for abstracting the data.

The requisite data were sought from records of patients discharged from the Albany Medical Center, Albany, N.Y., during the period February-April 1964. It was possible to obtain and analyze data on 4,520 such patients; more extensive information was obtained on 644 who were 65 and over. The analysis covered the days of care, average stay, discharge status (alive or dead), sources of payment for care, and hospital charges, by age and sex. Much of the information was cross-tabulated by type of accommodation the patient occupied.

Cost per billing of abstracting the data

averaged \$1.31 for all patients, \$1.24 for patients under 65, and for patients 65 and over—on whom more complete data were obtained—\$1.73.

Patients 65 and over comprised 14.2 percent of the discharged patients and used 20.2 percent of the total days of inpatient care provided in the period. Total charges for their care amounted to 20.5 percent of patient charges.

The study entailed combining the information from the center's accounting department, where charges were billed and health insurance benefits were recorded, with information from other records. Differences in patterns of bed use by patients under age 65 and 65 and over, and by insurance type (recorded only for the aged) were found. Ten percent of the 65-69 year old patients were discharged dead, compared with 35 percent of those aged 85 and over; the overall rate for patients discharged dead of all patients who had passed their 65th birthday was 15 percent.

GRAVELLE, C. R. (Public Health Service), CHIN, TOM D. Y., and HEEREN, R. H.: *Surveillance of enterovirus infections in Iowa, 1957-62. Public Health Reports, Vol. 81, June 1966, pp. 534-540.*

A surveillance study of enterovirus infections was conducted in Iowa from 1957 through 1962 by the Kansas City (Kans.) Field Station, Communicable Disease Center, Public Health Service, and the Iowa State Department of Health, Des Moines. During this 6-year period, two major outbreaks occurred, one caused by poliovirus type I and the other by Coxsackie virus type B5.

A total of 141 enteroviruses were isolated from 195 paralytic patients: 139 were polioviruses, 1 was ECHO virus

type 9, and 1 was Coxsackie virus type B2. From 585 nonparalytic patients, 195 enteroviruses were isolated: 53 polioviruses, 23 ECHO viruses, and 101 Coxsackie viruses. Eighteen agents were unidentified.

Type I was the most common poliovirus and type B5 the most common Coxsackie virus isolated. Among the ECHO viruses, type 9 was most frequently isolated. Of particular interest is the isolation of ECHO virus type 18 from five patients with aseptic meningitis.

JENKINS, C. DAVID (University of North Carolina): *The semantic differential for health, a technique for measuring beliefs about diseases. Public Health Reports, Vol. 81, June 1966, pp. 549-558.*

The semantic differential for health, a technique for ascertaining beliefs about diseases, has the basic format of the standard semantic differential but its content derives from theories of the dynamics of health-related behavior. The technique was administered to a sample of 436 persons, aged 20-39 years, in an urban county in Florida. All of these persons recorded their beliefs and feelings about tuberculosis, poliomyelitis, cancer, and mental illness on duplicate scales.

Analysis of the responses indicated that (a) diseases are perceived in systematically different ways, (b) the semantic dif-

ferential for health is sensitive to these differences, and (c) certain new dimensions tapped by the semantic differential for health add useful components to the knowledge about the way diseases are viewed.

The findings suggested possible reasons for difficulties in obtaining participation in preventive and casefinding programs for certain diseases. Application of a technique such as this in operational studies by public health administrators, health educators, and voluntary health agencies may yield insights as to reasons behind some of these difficulties.

MANHEIMER, DEAN I. (California State Department of Public Health), **DEWEY, JOANNA, MELLINGER, GLEN D.,** and **CORSA, LESLIE, Jr.:** *50,000 child-years of accidental injuries. Public Health Reports, Vol. 81, June 1966, pp. 519-533.*

The California State Department of Public Health studied the medically attended, nonfatal injury experience of 8,874 children who had been enrolled in the Kaiser Foundation Health Plan for at least 4 years. The rate for all medically attended, nonfatal injuries for the first 16 years of life was found to be 246.1 per 1,000 children per year. When the 2.6 percent of nonfatal accidents that resulted in hospitalization are excluded, other nonfatal injuries required, on the average, 1.6 physician visits.

Boys had more medically attended injuries than girls at all ages; their injury

rate went up with age, whereas the rate for girls went down. Negro and Oriental children had lower rates for medically attended injuries than white children even after occupation of the father was controlled.

The data clearly show evidence of accident persistency in some children. Those with higher accident rates in one period of their childhood tended to have higher rates in subsequent periods.

The ordinal position of the injured child, kind of injury, part of body injured, and the type of accident causing the injury were also investigated.

THAYER, JAMES D. (Public Health Service) and **MARTIN, JOHN E., Jr.:** *Improved medium selective for cultivation of N. gonorrhoeae and N. meningitidis. Public Health Reports, Vol. 81, June 1966, pp. 559-562.*

The Thayer-Martin (T-M) selective medium for gonococci and meningococci has been widely accepted for the primary isolation of these organisms from conspicuously contaminated sites. The high degree of specificity and selective sensitivity of the medium also made it possible to accept with assurance presumptive culture testing for gonorrhea and the meningococcal carrier state.

Because ristocetin, used in the medium to suppress growth of the gram-positive flora, was removed from the market in 1964, it was necessary to find a suitable

substitute. The new antibiotic supplement offered uses vancomycin to inhibit gram-positive contaminants, sodium colistimethate for the gram-negative flora, and nystatin to inhibit yeast, which is sometimes a nuisance in vaginal and rectal cultures.

Comparison of the new medium with its predecessor showed equivalent growth of gonococci in specimens obtained from men and women with gonorrhea and greater inhibition of coagulase positive and negative staphylococci and of saprophytic *Neisseria*.

BLUMENTHAL, MURRAY (National Safety Council): *Traffic accident prevention research as a system component. Public Health Reports, Vol. 81, June 1966, pp. 569-572.*

Recognition of the importance of research in traffic accident prevention has come more slowly than in other health fields. There are many possible reasons for this lag. As in the initial stages of development of other research fields, progress has been haphazard and uncoordinated. Effective integration and application of research in traffic accident prevention is urgent. Almost 50,000 lives continue to be lost annually in traffic accidents in the United States.

Scientific and management techniques can be applied to science itself. Significant activities which may influence research from conception to application can be recognized and provided for. The

period of relatively unproductive and haphazard growth characteristic of a new scientific research area can thus be considerably shortened.

Therefore a conceptual and administrative framework based on an analysis of accident prevention research is presented. Administrative elegance cannot, of course, substitute for fundamental insights, well-designed experiments, or carefully analyzed and interpreted results. If, within such a framework, however, a master plan for accident prevention research and its application can be developed, perhaps some conditions responsible for the current neglect and ineffectiveness of safety research can be eliminated.